

WHAT IS CLAIMED IS:

1 1. A vehicle speed control system for a vehicle,
2 comprising:
3 a lateral acceleration sensor sensing a lateral
4 acceleration of the vehicle;
5 a vehicle speed sensor sensing a vehicle speed
6 of the vehicle;
7 a target vehicle speed setting device for
8 setting a target vehicle speed;
9 a drive system generating drive force of the
10 vehicle; and
11 a controller connected with said lateral
12 acceleration sensor, said vehicle speed sensor, said
13 target vehicle speed setting device and said drive
14 system, said controller,
15 calculating a correction quantity based on the
16 lateral acceleration and the vehicle speed,
17 calculating a command vehicle speed on the
18 basis of the vehicle speed, the target vehicle speed,
19 a variation of the command vehicle speed, and the
20 correction quantity, and
21 controlling said drive system to bring the
22 vehicle speed closer to the command vehicle speed.

1 2. The vehicle speed control system as claimed in
2 claim 1, wherein said controller determines whether
3 the vehicle is traveling on a curved road, and said
4 controller determines the variation of the command
5 vehicle speed at the time after the traveling on the
6 curved road is terminated, on the basis of one of a
7 curve-terminated vehicle speed at the time when the
8 curved road traveling is terminated and a start-end
9 deviation between the vehicle speed at the time when

10 the vehicle starts traveling on a curved road and
11 the vehicle speed at the time when the curved road
12 traveling is terminated.

1 3. The vehicle speed control system as claimed in
2 claim 1, wherein said drive system includes an
3 engine system with a continuously variable
4 transmission (CVT) and a brake system.

1 4. The vehicle speed control system as claimed in
2 claim 2, wherein said controller determines that the
3 curved road traveling is terminated when the
4 correction quantity returns to zero after the
5 correction quantity takes a value except for zero.

1 5. The vehicle speed control system as claimed in
2 claim 2, wherein said controller calculates the
3 variation of the command vehicle speed from a map
4 stored in said controller and an absolute value of a
5 deviation between the vehicle speed and a maximum
6 value of the command vehicle speed.

1 6. The vehicle speed control system as claimed in
2 claim 5, wherein the map for calculating the
3 variation performs characteristics that the
4 variation is increased according to the increase of
5 the absolute value when the absolute value of the
6 deviation is within an intermediate range, that the
7 variation is set at a first constant value equal to
8 a maximum value of the variation in the intermediate
9 range when the absolute value is greater than a
10 maximum value of the absolute value in the
11 intermediate range, and that the variation is set at

12 a second constant value equal to a minimum value of
13 the variation in the intermediate range when the
14 absolute value is smaller than a minimum value of
15 the absolute value in the intermediate range.

1 7. The vehicle speed control system as claimed in
2 claim 1, wherein said controller calculates the
3 command vehicle speed at predetermined time cycles.

1 8. A vehicle speed control system comprising:
2 a command vehicle speed variation determining
3 section that calculates a command vehicle speed
4 variation on the based of a vehicle speed and a
5 target vehicle speed set by a vehicle operator;
6 a lateral acceleration vehicle speed correction
7 quantity calculating section that detects a lateral
8 acceleration of a vehicle and calculates a
9 correction quantity from a predetermined
10 characteristic and the lateral acceleration;
11 a controlling section that controls a drive
12 system of the vehicle so as to bring the vehicle
13 speed closer to a target vehicle speed; and
14 said command vehicle speed variation
15 determining section determining the command vehicle
16 speed variation at the time after the traveling on
17 the curved road is terminated, on the basis of one
18 of the vehicle speed at the time when the curved
19 road traveling is terminated and a deviation between
20 the vehicle speed at the time when the vehicle
21 starts traveling on the curved road and the vehicle
22 speed at the time when the curved road traveling is
23 terminated, instead of calculating on the based of a
24 vehicle speed and a target vehicle speed set by a

25 vehicle operator.

1 9. The vehicle speed control system as claimed in
2 claim 8, wherein said command vehicle speed
3 variation determining section determines the command
4 vehicle speed variation at the time when the curved
5 road traveling is terminated from the vehicle speed
6 at the time of termination of the curved road
7 traveling and a characteristic that the command
8 vehicle speed variation becomes smaller as the
9 vehicle speed becomes smaller.

1 10. The vehicle speed control system as claimed in
2 Claim 9, wherein said command vehicle speed
3 variation determining section determines the command
4 vehicle speed variation at the time when the curved
5 road traveling is terminated from a deviation
6 between the vehicle speed at the time when the
7 curved road traveling is started and the vehicle
8 speed at the time of termination of the curved road
9 traveling, in accordance with a characteristic that
10 the command vehicle speed variation becomes larger
11 as the vehicle speed becomes larger.

1 11. A vehicle speed control system for a vehicle,
2 comprising:
3 a command vehicle speed variation determining
4 section that calculates a command vehicle speed
5 variation on the basis of a deviation between a
6 vehicle speed and a target vehicle speed set by an
7 operator;
8 a correction quantity calculating section that
9 detects a lateral acceleration of the vehicle and

10 calculates a correction quantity according to the
11 lateral acceleration;
12 a command vehicle speed calculating section
13 that calculates a command vehicle speed by
14 subtracting the correction quantity from a first
15 value calculated from at least one of a target
16 vehicle speed set by a vehicle operator and a second
17 value calculated from the vehicle speed and the
18 variation of the command vehicle speed; and
19 said command vehicle speed variation
20 determining section determining the correction
21 quantity so that the correction quantity becomes
22 smaller as the vehicle speed becomes higher.

1 12. The vehicle speed control system as claimed in
2 claim 11, wherein said correction quantity
3 calculating section calculates the lateral
4 acceleration from the vehicle speed and a value
5 obtained by processing one of a steer angle and a
6 yaw rate by means of a low-pass filter, calculates
7 the correction quantity according to the lateral
8 acceleration, and varies the correction quantity by
9 varying a cutoff frequency of the low pass filter
10 according to the vehicle speed.

1 13. A vehicle speed control system comprising:
2 a controller,
3 determining whether the vehicle is traveling on
4 a curved road,
5 determining a variation of the command vehicle
6 speed at the time after the traveling on the curved
7 road is terminated, on the basis of one of the
8 vehicle speed at the time when the curved road

9 traveling is terminated and a deviation between the
10 vehicle speed at the time when the vehicle starts
11 traveling on the curved road and the vehicle speed
12 at the time when the curved road traveling is
13 terminated, and
14 controlling a drive system of the vehicle so as
15 to bring the vehicle speed closer to the command
16 vehicle speed.

1 14. A method for controlling a vehicle speed of a
2 vehicle, comprising:
3 calculating a command vehicle speed variation
4 on the basis of a deviation between a vehicle speed
5 and a target vehicle speed set by an operator;
6 detecting a lateral acceleration of the
7 vehicle;
8 calculating a correction quantity according to
9 the lateral acceleration;
10 calculating a command vehicle speed by
11 subtracting the correction quantity from a value
12 calculated from at least one of a target vehicle
13 speed set by a vehicle operator and a value
14 calculated based on the vehicle speed and the
15 command vehicle speed variation; and
16 determining the correction quantity so that the
17 correction quantity becomes smaller as the vehicle
18 speed becomes higher.

1 15. A vehicle speed control system for a vehicle,
2 comprising:
3 detecting a vehicle speed of the vehicle;
4 detecting a lateral acceleration of the
5 vehicle;

6 calculating a correction quantity based on the
7 lateral acceleration and the vehicle speed;
8 calculating a command vehicle speed on the
9 basis of the vehicle speed, a target vehicle speed,
10 a predetermined variation of the command vehicle
11 speed, and the correction quantity; and
12 controlling a drive system to bring the vehicle
13 speed closer to the command vehicle speed.